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## REPORT

ON
Prellminary Survey of Various Routes of the
 Ist Section,

## ST. LIN TO MONTREAL

BY
CHARLES $\underset{\text { Engineer in Chief. }}{\text { L. }}$.
grantreat:
PILINTED BY JOHN LOVELL, ST. NICEOLAS STREET.
1874.

## MONTREAL AND LAURENTIAN RAILWAY.

## zotatid of Bisectors.

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Managing Director:
P. S. MURPHY, Esq.

Secretary-Treasurer :
E. def. De bellefeuille, Esq.

Engineer-in-Chief:
Charles leg Ge, Esq., C.E.

## REPORT.

Montreal, 18th December, 1873.
To E. Lef. de Bellefeuille, Esq., Secretary, M. \& L. C. Ry.

Sir,-Having been honoured by the President and Directors with the duty of exploring, surveying and reporting on the first section of your railway from St. Lin to Montreal, and having performed the first two portions of the work, it now becomes my duty to place the results arrived at before the Board in the following report.
Prior to going into the details of our recent investigations, it may be well to give a brief glance at the early history of the scheme, and the beneficial results anticipated to that inportant section of the northern country to be traversed and opened up by the railway, as well ai to the city of Montreal, the grand terminal point aimed at on the south.

Since the year 1869, when public attention was first strongly directed to the subject of colonization in connection with the Montreal and St. Jerome Railway, up the valley of the North River, the importance of additional lines of communication with the great Laurentian region has been constantly felt, and steadily growing in favour. A great front arterial line from Quebec to Deep River on the upper Ottawa, has been chartered, heavily subsidized both by government and municipalities, and a portion is now under construction. Branch lines from this main Trunk have been projected northward at Three Rivers, Montreal, and Ottawa, up the St. Maurice, North and Cratineau Rivers, the valleys of those streams forming avenues of access, as it were,
into the Laurentian country. Intermediate between the North and St. Maurice rivers, we find the Ouareau, L'Assomption, Maskinonge, Du Loup, and several other considerable streams, but having their sources far to the north in the Laurentides. These mountains run nearly parallel with the St. Lawrence, between Montreal and Quebec, at distances of from thirty to forty miles from the river. The intervening space is comparatively level and of great fertility : while on the other hand the mountainous portion to the north, rich in timber and minerals, also possesses arable or grazing land to about one half its extent, of which latter portion about one half, comprised in the valleys, is admirably adapted for crops. In this vast Laurentian country north of the level plateau referred to, we find a few straggling settlers, interested either in the chase or in lumbering operations. The almost insuperable difficulties hitherto existing of trensport to and from markets, has prevented any influx of settlers intc a region far superior in many of its characteristics to countries like Sweden, Norway, Switzerland, North of Scotland, and portions of Spain and Austria, where large, industrious, and hardy populations exist ; with cheap and efficient means of transportation provided, the Laurentian country, now looked upon as of no value, is destined to become one of the most important sections of our country. In addition to its great mineral wealth, it is to this region all the country on the south must look in future for its supply of wood and timber, being intended, no doubt, by Providence as a nursery or reservoir for the production, preservation, and supply of fuel and lumber for all time, to the, in these respects, less favoured agricultural sections bordering the St. Lawrence. This fertile agricultural belt between the Laurentian country and the St. Iawrence and Ottawa rivers on the one side, and from Quebec city to Upper Pontiac in the other direction, now contains a population of about 483,000 souls, and will in a few years be
en the L'As nsider$h$ in the ith the stances vening hile on rich in land to out one crops. plateau d either insuad from gion far e Sweportions hardy $f$ trans ed upon impormineral th must intendfor the aber for cultural agricult. LawQuebec atains a years be
traversed from end to end by the Grand Trunk Linc of Rair-way before referred to. In order to give lateral expansion. on the north, and fruitful feeders to the road, the branch lines mentioned are a necessity.

In the projection of these minor lines, two objects have to be kept in view-

Firstly-In the prcliminary stage of construction through the fertile belt, it is desirable to locate them in such a manner as will connest, to the grcatest possible extent, the more important localities or centres of local trade, by the cheapest and most direct routes, with the main terminal points on the Trunk line : the projected branch roads heading, at the same time, for the points in the mountains where the rivers emerge, and whose valleys are eventually to be fullowed northward in the second or third stages of construction, for colonization purposes.
These governing and correct principles for the future development of the North have apparently been observed by your Company. The North River Valley, with country to East and West being already occupied or covered by the "Montreal Northern Colonization Railway" charter, you select the Ouareau, a river running nearly parallel with the first, and about twenty-two miles to the East. This large stream having its principal source in the lake of the same name, some sixty miles north-east of Montreal, flows south, passing from the Laurentian mountains near Rawdon, falls into the L'Assomption River, six miles south of Industry, and afterwards flows into the St. Lawrence near the eastern end of Montreal Island. Taking Montreal and Rawdon as principal objectivo points, the first being the market sought, and the latter as the gateway into the Laurentian country viô the Ouareau pass, it now remains to determine the best and most economical mcans of connecting the two points. An independent line from Rawdon to Montreal, of some
thirty-eight miles in length, will require to cross the two large northern outlet branches of the Ottawa River, Mille Isles, and Prairie Rivers, at an expense which will place it beynnd your present means to accomplish. Fortunatcly, however, these rivers are to be crossed in two directions-firstly at or near Laehenaie by the North Shore road from Quebec, and sccondly near Ste. Therèse, by the Northern Colonization Road from Montreal to Ottawa. A junction of your line with either of these roads will enable you to pass the rivers by the bridges of either Company, and so over its line into the city, on such terms as may be mutually agreed on. This being the case we ean, in the meantime at any rate, take leave of the idea of an entirely independent line, and confine ourselves to the consideration of the question, which of the two Railways it will be most in the interest of your Company to join, and the localities to be touehed.

We liave hinted already that in the first instalment of the work it may not be finaneially in your power to carry the road to Rawdon. The commencement and progress of the line must be at some point easily aecessible to Montreal, and move northward in the direction of Rawdon, and Lake Ouareau, as circumstanecs warrant. Rawdon up to the present has made no offer of assistance, we must therefore fix upon the most northern locality in line of the road whieh is prepared to contributc. This plaee is St. Lin, a flourishing incorporated village, situated on the L'Achigan River, in the county of L'Assomption, and contains a population of 1,000 .

It possesses considerable water power, manufactures a large quantity of deals and other lumber ; it is also the centre of a considerable grain, hay, and produce trade, being surrounded by a large extent of fine agricultural country; it possesses a new brewery capable of exporting 200,000 gallons of beer yearly, with inereased capacity if the road is built; there are at present in operation three brick jards,
the two er, Mille 11 place it ely, how-s-firstly Quebec, onization your line he rivers line into on. This te, take d confine h of the Company nt of the carry the ss of the real, and nd Lake to the refore fix which is ourishing r, in the of 1,000 . ctures a the cenle, being intry ; it 000 galroai is k yards,
each employing modern machincry, and capable of turning out three million bricks annually; as the clay here is of the best quality, large quantities would be exported by rail. Quarries, undeveloped as yet, and only waiting for means of transportation, will give fine red, blue and white marbles, and also thick beds of chazy limestone for building purposes. To give some idea of the local importance of the place, it may be mentioned that there aro fifteen first rate commercial houses doing a large business, besides many smaller ones, three shops for the manufacture of carriages, t:xelve forges for iron work, and a large tannery. An"extensive market is now in course of erection for the benefit of the village and surrounding country. The iron mine recently purchased by Montreal capitalists is also in the vicinity of St. Lin. During the last year, thirty houses have been built in the village, many of them with brick and of an architectural character which would do credit to Montreal. Altogether the visitor to this village would be impressed with the idea of its great vitality, but that the most important requirement for its commercial advancement will be a rail connection with Montreal, and would not be surprised to learn that its citizens in energetically advocating the idea had supplemented this advocacy by a grant of $\$ 25,000$ in aid of the scheme, and were also busily employed in getting additioral assistance from intervening municipalities.

I have given these brief details with reference to the village, the birth place of your railway, with the view of shewing its leading position in this northern country, and that consequently it becomes a governing point in the present examination, and cventually in tie future progress of your road. In the early history of the enterprise, when I was consulted prior to applying for a charter, it was pointed out to the President that if a junction of the line were effected with either of the main lines at various points, the following distances would

# represent approximately the lengths of line to build from St. Lin, and running distances to Montreal. 


3rd. St. Lin to Terrebonne, therce to Porteous Crossing 24 miles ) and running distance to Mile Ead...................... $35 \frac{1}{2}$ miles ;
4th. St. Lin to Ste. Théeèse to build. 14.30 miles and running distance to Mile End about 32.09 miles $\}$
5th. St. Lin to Porteous Crossing to build ..... 16 miles and running distance to Mile End about...................... 30 miles $\}$
6th. St. Lin to St. Jerome to build 13.20 miles and running distance to Mile End.
42.37 miles $\}$

Of the above lines, for the purposes of a rough comparison, Nos. 1 and 3 may be at once ruled out on account of extra length of line to be built. Financially viewed, Line No. 2, had a chance of getting Government and Municipal aid.

Line No. 4...........................................................................100,375
Line No. 5..............................................................103,000
Line No. 6...............................................................73,000
The financial aspect of the question will, I am afraid, rule out No. 2, unless, as it terminates at Hochelaga, that municipality should come forward to its assistance with a liberal grant, and so keep the advantages of the great local trade it will create. Failing to do this, and Mile End assisting the line coming in over the Montreal Northern Colonization Railway, the latter place will secure the prize. For the present, as Hochelaga has made no movement, Line No. 2 must be eliminated. There will remain, consequently, but lines Nos. 4,5 , and 6 , or the three coming in over the Montreal Northern Colonization Railway to examine more minutely.
In October last, when I received your instructions to make instrumental surveys, the above three lines alone occupied my attention as apparently presenting the most favourable financial foundations.

Thus the St. Jerome Route, ' Fo. 6, had the prospect of getting Municipal and Government aid as follows.
$\qquad$
St. Lilu.
,

Government ail $\$ 1750$ to $13 \cdot 20$ miles..............................23,100
$\qquad$
With 13.20 miles to build and 42.37 to Mile End.
The Porteous Crossing and Ste. Anne Route, No. 5, as follows:

| Mile End. | . $8.215,1000$ |
| :---: | :---: |
| St. Anne. | 25,000 |
| St. Lin | ...2.0,000 |
| Governme | .28,000 |

$$
\text { Total...................................................... } \$ 103,100
$$

With 16 miles to build and :60 miles to Mile End.
The Ste. Therèse and Ste. Anne Route, No. 4, as follows:
Mile End.................... ...... .... .......................... $\$ 25,000$

St. Lin..............................................................................25,000
Ggvernment $\$ 1750$ to $14!$ miles........................................ 25,375
Total.................................................................. 100,375
With 142 miles to build and 32.09 miles to Mile Enul.
It would appear from the above that Line No. 6, via St. Jerome, might also be struck off on account of the much greater distance to Montreal, and the contest would rest between Ste. Thérèse and Porteous Crossing, the first with the least number of miles to be built, and the second a diminisized total distance for traffic. The two reasons which operated in favour of surveying a line via St. Jerome were, 1st, it being the shortest line to be built ; and, 2nd, one and the same train service would answer both lines.

With these preliminary and explanatory remarks I will now draw your attention to the various maps, profiles and detailed estimates which have been prepared by my assistants, com-
menciug, in the first instance, with the St. Jerome Route,
from the Montreal Northern Colonization Railway which terminates at that place.
The location of the St. Jerone Branch of the Moutreal carrying with it a government subsidy of three per cent. on $\$ 5000$ per mile, which capitalized will give about $\$ 1750$ per mile. As New Glasgow, one of the villages aimed at, is nearly on the direct route from St. Jerome to St. Lin, and moreover is a place of some local importance, with considerable water power, it was thought well to touch it, and it therefore became a governing point in the survey of the line.

Leaving the Montreal Northern Colonization Railway at St. Jerome with a curve to the right of 9 degrees or 637 feet radius, the line runs in a south-eastern direction a direct course of nearly two miles, where, curving to the left with 5730 feet radius, it crosses the Parish Boundary of St. Jerome and Lacorne about one thousand feet north of the travelled road. Proceeding onward in nearly a strạight direction, it passes Ste. Sophie eight huudred feet north of the Church. From this place the course is direct to New Glasgow, crossing the River L'Achigan about a hundred feet north of the road bridge; afterwards curving gently to the right, it follows a geuerally direct line to St. Lin; terminating on the farm of Dr. Brisson, a quarter of a mile north of the river, and whence it can afterwards be extended eastward in the direction of Industry, or northward to Rawdon. An examination of the profile will show a very favourable condition of gradients and earth work. No grade exceeding $52_{1}$ s feet per mile, but two small streans to bridge, and eight or ten gullies to fill.
me Route, way which
e Montreal e preser.t a s arranged the valley New Glasarter, and cent. on $\$ 1750$ per ned at, is . Lin, and considerit, and it $f$ the line. dailway at or 637 rection a g to the Boundary eet north nearly a lred feet is direct about a curving to St . rter of a wards be orthward w a very No grade eans to

The entire measured distance on the located line is $13 \cdot 17$ miles, or 0.44 of a mile longer than an air line between the extreme points, owing to the bend made in going north to Ste. Sophie and Now Glasgow.

The total estimated cost, allowing $\$ 25,000$ for station buildings and contingencies, will amount to $\$ 191,753$, or at the rate of $\$ 14,527$ per mile.

The foliowing tables will give the characteristics of the line in reference to curvature and gradients.

Curvature.


Grades.

| Length of <br> level line. | 0 to 20 feet <br> per mile. | 20 to 30 feet <br> per mile. | 52.80 feet <br> per mile. |
| :---: | :---: | :---: | :---: |
| Miles. <br> 3.54 | Miles. <br> 8.13 | Miles. <br> 0.64 | Miles. <br> 1.12 |

The entire distance from St. Lin to Montreal, at Hochelaga, by this route will be 44.87 miles, or to Mile End; which will probably be the terminus of the road, 42.37 miles.

In the foregoing estimates no allowance has been made for rolling stock, it being assumed the line would be rented or worked by the Montreal Northern Colonization Railway, and that the same train service would pass over the road, which is claimed to be the cheapest mode of working tho
traffic, on a short line, like the one in question, thereby doing away with special management and rolling stock.

> Taking the total estimated cost at............................... $\$ 191,753$ And deducting Municipal and Government grants as before stated of ................................................................. $\$ 73,100$

> Leaves a balance to be provided by issue of bonds of. $\$ 118,653$ Or say in round numbers......................................... $\$ 120,000$

This sum at 7 per cent. will require an annual outlay of $\$ 8400$, or at the rate of $\$ 637$ per mile.

To get some idea of the value of the traffic which may resannably be expected to pass over this route, we will, for purposes of comparison, take the actual traffic flowing over other lines now operating in Canada.
The following table will give a condensed view of the Traffic of six Canadian Railways.

| Railway ${ }^{\text {a }}$ | Miles, | Receipts per mile per an num. num | Gross Revenue. | Population in section through which road passes. | Population per mile of Railway. | Receipts per nead of popu- |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Great Western | 351 | $\begin{gathered} \$ \\ 13,834 \end{gathered}$ | $\begin{gathered} \$ \\ 4,855,874 \end{gathered}$ | 419,670 | 1480 | $\begin{gathered} \$ 1 \\ 11.09 \end{gathered}$ |
| Grand Trunk | 1,377 | 6,119 | 8,426,309 | 1,167,277 | 847 | 7.21 |
| Northern.. | 97 | 9,223 | 894,774 | 154,005 | 1596 | 5.08 |
| Midland....................... | 93 | 3,272 | 304,333 | 109,950 | 1182 | 2.76 |
| Brockville and Ottawa... | 86 | 3,202 | 275,431 | 71,124 | 827 | 3.86 |
| St. Lawrence \& Ottawa. | 54 | 2,486 | 134,280 | 70,011 | 1296 | 1.91 |
|  | 2,200 |  | $\begin{gathered} 14,891,001 \\ \text { Average } \\ \$ 6,76864 \end{gathered}$ | 1,992,037 | Aver. 906 | Aver. $\$ 7.47$ |

From the above it will be seen that the gross average receipts of these six Railways

| Amount to....................................... | $\$ 6818$ per mile. |
| :--- | :--- |
| With an average population per mile of | 906 |
| And average receipts per head of........ | $\$ 7.47$ |

Leaving out the three first, which are above the average $\$ 398$
which are local roads and pass through much the same character of country and population, we find: -

$$
\begin{array}{lr}
\text { Gross average receipts per mile............... } & \$ 3,065 \\
\text { Average population per mile.................. } & 1077 \\
\text { A verage receipts per head of population.... } & \$ 2.84
\end{array}
$$

The population, which may be fairly said to be tributary to the road from St. Jerome to St. Iin, and who will find it the most convenient route to Montreal, numbers 18,500, or say an average per mile of 1404 ; and applying the same rate per head of $\$ 2.84$, will give a gross annual revenue of $\$ 3987$ per mile. The mileage being 13.17 miles, at $\$ 3987$ per mile, will give a

| Total gross annual revenue of............................ | 08 |
| :---: | :---: |
| Allowing 65 per cent.for working expenses there will be for deduction. $\qquad$ | 34,130 |
| Leaving net revenue to meet interest on bonds and charges. $\qquad$ | 18,378 |
| We have already seen that the bond interest will amount to.. | 8,400 |
| ving a balance to meet car hire, | 9,9 |

Say $\$ 10,000$ per annum, an ample margin in addition to the 65 per cent. for working the road by the Montreal Northern Colonization Railway.

The extra distance of from ten to twelve miles over which this traffic would require to pass if going round by St. Jerome, and the additional expense so incurred for all time, naturally aroused a desire on the part of the inhabitants of St. Lin, and Parishes to the north, east and south, to obtain a shorter cut through to Ste. Thérèse, or to Porteous Crossing, and form a junction with the Montreal Northern Colonization Railway at either of these points. In view of this route being adopted, a contribution from an intervening

Parish, Ste. Anne, of at least $\$ 25,000$ was promised. The proposal to shorten the entire distance to Montreal so considerably, although at the expense of a somewhat longer branch line to build, coupled with the liberal contribution from Ste. Anne, rendered it desirable to make an instrumenttal survey of that route.
An examination of the General Map will shew Ste. Thérèse, St. Lin, and Rawdon lying almost on an air line, and therefore the most direct route fiom Ste. Thérèse for your railway, on its mission of colonization, to strike the Valley of the Ouareau River where it enters the Laurentian mountains, at Rawdon.
With these remarks your attention is now drawn to the large map showing the course of the line, which will be briefly described as follows :

Leaving St. Lin at the point where the St. Jerome line terminated, the course following is direct to Sie. Anne, a distance of about six and a half miles from the starting point: passing this village on the east, the line curves slightly to the left, and afterward proceeds in a direct course to an intersection with the Montreal Northern Colonization Railway on the top of the hill or plateau behind Ste. Thérèse : thence over the road to Montreal, having passed from the upper to the lower plateau at Ste. Thérèse with a grade of $52 \cdot 80$ feet to a mile. The profile on this line does not show as favourably as that via St. Jerome, the grades being heavier, notably near Ste. Anne where, in crossing the wide elevated ridge, they reach for short distances each way, 80 feet to a mile.

## 15

ised. The real so conwhat longer contribution instrument-

1 shew Ste. an air line, Thérèse for ke the ValLaurentian awn to the ch rill be

Cerome line ie. Ánne, a rting point: slightly to ourse to an zation Rail. Thérèse : $d$ from the a grade of es not show ades being g the wide ch way, 80

The following table will better iliustrate this question, as compared with the St. Jerome line.

| Lines. | Level. | 0 to 20 feet to a mile. | 20 to 30 feet to a mile. | 40 feet to $\Omega$ mile. | $\begin{array}{\|l} 52.80 \\ \text { feet to } \\ \text { a mile. } \end{array}$ | 80 feet to a mile. | Total distance in length of line. | St. Lin to Mile End. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| St. Lin to |  |  |  |  |  |  |  |  |
| Ste Thérèse | 5.20 |  |  | 0.30 |  | 0 |  | . 09 |
| St. Lin to $\}$ | 3.54 | 8.13 | 0.64 |  | 1.12 |  | 13.20 | 42.3 |
| St. Lin to ${ }^{\text {Sta }}$ |  |  |  |  |  |  |  |  |
| Porteons | 4.69 | 6.51 | 0.95 |  | 0.70 | 3.15 | 16.00 | 30.00 |
| Crossing. |  |  |  |  |  |  |  |  |

CURVATURE.


The total cost of the line via Ste. Thérèse is $\$ 215,351$, or an average of $\$ 15,060$ per mile.

With the view of still redusing the distance, a line was run from the one just described, leaving it at Ste. Anne and striking directly through to a junction with the Montreal Northern Colonization Railway at Porteous Crossing of the Mille Isles River. The line from St. Lin in connection with this new route is shewn in the above tables as No. 3. The distance to Mile End is shortened over two miles, but the length of branch to be built is increased 1.70 miles. The leading objection to this line is the heavy grade leading to the upper plateau north of Porteous Crossing, or a continuation of the Ste. Thérèse ridge. At St. Thérèse the comparatively low grade of 52.80 is obtained by very heavy expenditure, and would be used by your line if passing in that
direction. By the Porteous Crossing route you will have to scale this height alone, and as the expenditure necessary for obtaining a low grade would probably be beyond your means, I have made use of an 80 feet grade for the distance of $1 \frac{1}{2}$ miles. Under these conditions the length of branch to be built will be sixteen miles at a total cost of $\$ 246,899$, or an average rate per mile of $\$ 15,431$.

The following abstract will present the leading points in: connection with the three lines:

| Lines. | Length to be built. | Distance to Mile End. | Totai Cost. | Cost per nille. | Amount of sub. sidy anticipated. | $\begin{aligned} & \text { Balance } \\ & \text { to be } \\ & \text { raised } \\ & \text { on } \\ & \text { bonds. } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Line vi | Miles. | Miles. | \$ | \$ | \$ | \$ |
| St. Jerome ....... Line via | 13.20 | 42.37 | 191,753 | 14,527 | 73,100 | 118,653 |
| Ste. Thérèse ...... | 14.30 | 32.09 | 215,351 | 15,0 | 100,3 |  |
| Line via Porteous Crossing | 16.00 | 30.00 | 246,899 | 15,431 | 103,00 |  |

Assuming that the respective routes are subsidized to the above amounts, an inspection of the table will shew the line via Ste. Anne and Ste. Thérèse to be the most favourable, in a financial point of view, to the Company, as there will be $\$ 3677$ less to raise on bonds for its construction than if the St. Jerome route were selected. The large extra amount of $\$ 28,923$ to be raised for the Porteous Crossing route, together with its unfavourable grade, will cperate seriously against its adoption. There remains now but the single argument of double train service in the case of the Ste. Thérèse line, but to which I do not attribute much importance, from the fact that if the line were carried via St. Jerome and New Glasgow to St. Lin, but a few years will probably elapse before the St. Jerome Branch of the Northern Colonization Road will be carried up the valley of the North River, along which the regular train service of that road will pass, and render a
will have to ecessary for your means, tance of $1 \frac{1}{2}$ ranch to be , 899 , or an ng points in
$\left.\begin{array}{c|c}\begin{array}{c}\text { ount } \\ \text { ub. } \\ \text { anti- } \\ \text { ted. } \\ \text { to be }\end{array} \\ \text { raised } \\ \text { on } \\ \text { onds. }\end{array}\right]$
ized to the ew the line vourable, in ere will be than if the $t$ amount of e, together against its rgument of se line, bat m the fact New Glaspse before ation Road long which d render a
double one necessary at St. Jerome for the St. Lin Branch. is this double service will ere long be inevitable, it matters little whether it take place at St. Jerome or at Ste. Thérèse ; the latter place rather having the preference as it is the junction of the St. Jerome Branch with the main line of the Montreal Northern Colonization Railway, and it is desirable in Railway economy to combine as many elements in one place as possible. For the reasons which have been given, it becomes my duty, in the interest of your Company, and the future successful working of the railway, to recommend for adoption the route passing from St. Lin, via Ste. Anne, to a junction with the Montreal Northern Colonization Railway at Ste. Therèse.

On the assumption that this route will be adopted, a few investigations will be made as to its financial position.

> Cost of line as per estimate. \$215,351
> Roiling Stock, say. 114,000

> Total cost of tine and equipment. . $\$ 329,351$
> Deduct Government and Municipal aid..................... 100,375
> Total amount to be raised on Bonds.
> $. \$ 228,976$
> Say in round numbers $\$ 230,000$.
> At seven per cent. the amount to be raised annually for interest will equal $\$ 16,100$.
> It has already been shewn that a moderate estimate of the gross traffic will reach $\$ 3987$ per mile-to be on the safe side cali it $\$ 3500$ a mile per annum, which multiplied by the length of line 14.30 miles, will give a total gross annual $\$ 50,050$
> Deduct for working expenses 65 per ceni 32,532

> There remains a balance to meet interest on bonds of $\quad 17.518$ The amount actually required for this service is.. 16,100

> Leaving \& balance to the good of.
> \$ 1,418 revenue of.

In the foregoing estimate the amount of rolling stock is sufficient to work a line double the length, as it embraces
two locomotives, three first class, ten second class, twenty freight, and thirty platform cars.

Considering the subject in another light, that the Company build the road and lease the rolling stock, the following will be an exhibit of the probable result :

| Total estimated cost as before Deduct Municipal and Government aid. | $\begin{array}{r} \$ 215,351 \\ 100,375 \end{array}$ |
| :---: | :---: |
| Add two locomotive engines which the Company should own. | $\begin{array}{r} \$ 114,976 \\ 25,000 \end{array}$ |
| Say. <br> Requiring on this amount to meet interest annually. Estimate of net revenue from traffic as before. | $\begin{array}{r} \$ 139,976 \\ \$ 140,000 \\ \$ 9,800 \\ \$ 17,518 \end{array}$ |
| Balance available for rental of cars. <br> Say. | $\begin{aligned} & \$ 7,718 \\ & \$ 8000 \end{aligned}$ |

In a short line, like the one in question will be for a number of years, it may probably be in your interest to lease the road to the Montreal Northern Colonization Railway and attain greater economy by working both lines under one management.

With the successful completion of your line to St. Lin,
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crow in the Province. I understand a strap railway was at one time in existence between Industry and Rawdon, but only worked during the summer months, and now abandoned. If this be so, and the position of the line correctly shewn on the map before me, five miles of the graded line could be
ass, twenty
the Come following

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14ヶ,000
$\$ 9,800$
$\$ 17,518$
$\$ 7,718$
$\$ 8000$
ill be for interest to n Railway under one
o St. Lin, vould soon tion ; still strive to with Mone map will Lin, St. d at interand coversurpassed as at one , but only doned. If shewn on could be
utilized, by striking it about that distance north-west of Industry, thereby reducing the grading of the second extension from St. Lin, in this direction, to only fourteen miles. *Be this as it may, a great point will be attained, in the meantime, for this northern country if the rail can only reach St. Lin. That it is practicable to build the road for a moderate amount, that it will give a fair return for the money invested, has been demonstrated, and of its truth I have no doubt. With the road in operation it would become an important feeder for the Montreal markets. Moccasin trains could leave St. Lin, St. Jerome, and Grenville, timed to meet at Ste. Thérèse, vhove one engine could take them in to Mile End Station. I say riile End Station specially for this service, as it would be the point most equally accessible to and from all points of the city. In view of this, the enterprise should be viewed with great favour by that municipality.

I do not think it necessary to go over the oft-told tale, from the time of Stephenson down to the present, as to the wonderful amount of good which will follow the construction of the road in the material, social and religious benefics which will be conferred and felt by every man, woman and child for many miles distant from its line. The intelligent people in the North are wonderfully well posted up in all these points, and have given a practical exemplification of their belief by almost unanimously subscribing $\$ 50,000$ in the two villages of St. Lin and Ste. Anne, to assist before even an exploration or estimate of cost had been made. Now that this service has been performed with such satisfactory results, may we not hope the enterprise will prosper, and speedily be crowned wit' success.

I have the honour to be, Sir, Your obedient servant. CIIARLES LEGGE, Chief lingineer Montreal and Laurentian Colonization Railway Company.








SHEWING PROPOSED LOCATION

## Montreal Noriteren Couomzarion Railway FROM

## -Montreal to Georgian Bay \% Soul Ste Marie

## wove reval routes

to Accompany Mr Lecce's Report.

GEO. BISHOP \& CO. STEAM LITH, MONTREAL.
scale of british statute miles







